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EXAMINER	
CULLEN, SEAN P	
ART UNIT	PAPER NUMBER
1795	

NOTIFICATION DATE	DELIVERY MODE
06/16/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/581,859	KAJIWARA, SHIGETO	
	Examiner	Art Unit	
	Sean P. Cullen	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Examiner Notes

Regarding limitations recited in claims 15-30 and 32 with respect to the control portion, these limitations are considered functional limitations and are not given patentable weight. In the present office action, the examiner has cited prior art reference to show that the functional limitations are disclosed in the prior art of record. See MPEP § 2176.05.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 15-18, 23-26 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nonobe et al. (U.S. 5,929,594) in view of Hauer (U.S. 6,214,484).

Regarding claim 15, Nonobe et al. discloses a hybrid fuel cell system (10) comprising:

- a fuel cell (20);
- an electric power storage device (30);
- a load portion (32 and 34) which consumes electric power (C8/L25-37); and
- a control portion (50) which controls an amount of electric power consumed by the load portion (abstract)
    - based on a difference between a supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and an actual supply electric power value indicating an amount of electric power which is

actually supplied from the electric power storage device (I, C12/L23-46),

- wherein the control portion (50) changes the amount of electric power consumed by the load portion (32 and 34, C11/L56-C12/L7) to decrease consumption to remove imbalance between charge and discharge (Fig. 6) of the electric power storage device (30) in the system (10) by reducing the difference between the supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and the actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46).

Nonobe et al. does not explicitly disclose:

- wherein the control portion changes the amount of electric power consumed by the load portion to increase consumption to remove imbalance between charge and discharge of the electric power storage device

Hauer discloses a hybrid fuel cell system (Fig. 1) wherein the control portion (4) changes the amount of electric power consumed by the load portion (Fig. 1) to increase or decrease consumption to remove imbalance between charge and discharge of the electric power storage device (3, Fig. 1; C2/L34-C3/L2) to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device (C2/L34-C3/L2). Nonobe et al. and Hauer are analogous art because they are directed to hybrid fuel cell systems. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the hybrid fuel cell system of Nonobe et al. with the control method of

Hauer to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device.

Regarding claim 16, Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the control portion (50) obtains the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) based on
    - at least a supply electric power set value indicating an amount of electric power which needs to be supplied from the fuel cell (IF1, C10/L61-C11/L8) and
    - a consumption electric power set value indicating an amount of electric power which needs to be consumed by the load portion (IT1, C10/L61-C11/L8).

Regarding claim 17, Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the load portion (32 and 34) includes a system accessory (34), and
- the control portion (50) obtains the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8),
    - using the consumption electric power set value (IT1, C10/L61-C11/L8) including an amount of electric power consumed by the system accessory (34, C10/L61-C11/L8).

Regarding claim 18, Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the load portion (32 and 34) includes a drive motor (32), and
- the control portion (50) controls an amount of electric power consumed by the drive motor (32, C11/L56-C12/L7)
    - based on the difference between the supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and the actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46).

Regarding claim 23, Nonobe et al. discloses a hybrid fuel cell system (10) comprising:

- a fuel cell (20);
- an electric power storage device (30);
- a load portion (32 and 34) which consumes electric power (C8/L25-37);
- a first control portion (58) for obtaining a supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8),
    - based on a supply electric power set value indicating an amount of electric power which needs to be supplied from the fuel cell (IF1, C10/L61-C11/L8) and a consumption electric power set value indicating an amount of electric power which needs to be consumed by the load portion (IT1,

C10/L61-C11/L8);

- a difference obtaining portion (52, C12/L15-22) for obtaining a difference between the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and an actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46);
- a second control portion (80) for controlling the amount of electric power consumed by the load portion based on the difference (C12/L23-46); and
- a computing portion (54) for changing the amount of electric power consumed by the load portion (IT1, C10/L61-C11/L8) to decrease consumption to remove imbalance between charge and discharge of the electric power storage device (30) in the system (10) by reducing the difference between the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and the actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46).

Hauer discloses a hybrid fuel cell system (Fig. 1) wherein the computing portion (4) changes the amount of electric power consumed by the system accessory the load portion (Fig. 1) to increase or decrease consumption to remove imbalance between charge and discharge of the electric power storage device (3, Fig. 1; C2/L34-C3/L2) to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power

storage device (C2/L34-C3/L2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the hybrid fuel cell system of Nonobe et al. with the control method of Hauer to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device.

Regarding claim 24, Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the first control portion (58) obtains the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8),
    - based on at least the supply electric power set value indicating the amount of electric power which needs to be supplied from the fuel cell (IF1, C10/L61-C11/L8) and the consumption electric power set value indicating the amount of electric power which needs to be consumed by the load portion (IT1, C10/L61-C11/L8).

Regarding claim 25, Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the load portion (32 and 34) includes a system accessory (34), and
- the first control portion (58) obtains the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8),
    - using the consumption electric power set value (IT1, C10/L61-C11/L8) including an amount of electric power consumed by the system accessory

(34, C10/L61-C11/L8)

Regarding claim 26, Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the load portion (32 and 34) includes a drive motor (32), and
- the second control portion (80, C12/L23-46) controls an amount of electric power consumed by the drive motor (32, C11/L56-C12/L7)
    - based on the difference between the supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and the actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46).

Regarding limitations recited in claims 15-18 and 23-26 with respect to the control portion, these limitations are considered functional limitations and are not given patentable weight. In the previous office actions, the examiner cited prior art references to show the functional limitations were disclosed in the prior art of record; however, these functional limitations are not given patentable weight. The control portion (50) of Nonobe et al. is connected to the fuel cell (20), the electrical power storage device (30) and the load portion (32 and 34) of the hybrid fuel system (10). Therefore, the control portion (50) of Nonobe et al. is capable of increasing and decreasing the consumption to remove an imbalance between charge and discharge by reducing the difference between the supply electric power set value and the actual supply electric power value. See MPEP § 2176.05.

Regarding limitations recited in claim 15-18 and 23-26, which are directed to a manner of operating disclosed control portion, it is noted that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, it has been held that process limitations do not have patentable weight in an apparatus claim. See Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

Regarding claim 31, claim elements "first control means for obtaining…", "difference obtaining means for obtaining a difference", "second control means for controlling…," and "computing means for changing", are means (or step) plus function limitations that invoke 35 U.S.C.112, sixth paragraph. In the instant specification, "first control means for obtaining…" is positively recited as element (11), "difference obtaining means for obtaining a difference" is positively recited as element (41), "second control means for controlling…" is positively recited as element (12), and "computing means for changing" is positively recited as element (17, [0047]).

Regarding claim 31, Nonobe et al. discloses a hybrid fuel cell system (10) comprising:

- a fuel cell (20);
- an electric power storage device (30);
- a load portion (32 and 34) which consumes electric power (C8/L25-37),
- the load portion (32 and 34) including a system accessory device (34) other than a main drive motor (32);

- first control means (58) for obtaining a supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8),
    - based on a supply electric power set value indicating an amount of electric power which needs to be supplied from the fuel cell (IF1, C10/L61-C11/L8) and a consumption electric power set value indicating an amount of electric power which needs to be consumed by the load portion (IT1, C10/L61-C11/L8);
- a difference obtaining means (52, C12/L15-22) for obtaining a difference between the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and an actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46);
- a second control means (80) for controlling the amount of electric power consumed by the load portion based on the difference (C12/L23-46); and
- a computing means (54) for changing the amount of electric power consumed by the load portion (IT1, C10/L61-C11/L8) to remove imbalance between charge and discharge of the electric power storage device (30) in the system (10) by reducing the difference between the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and the actual supply electric power value

indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46).

Nonobe et al. does not explicitly disclose:

- a computing means for changing the amount of electric power consumed by the system accessory of the load portion

Hauer discloses a hybrid fuel cell system (Fig. 1) wherein a computing means (4) changes the amount of electric power consumed by the system accessory of the load portion (2, Fig. 1; C2/L34-C3/L2) to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device (C2/L34-C3/L2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the hybrid fuel cell system of Nonobe et al. with the control method of Hauer to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device.

3. Claims 19-22, 27-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nonobe et al. (U.S. 5,929,594) in view of Hauer (U.S. 6,214,484) and Okhubo et al. (EP 1,220,413).

Regarding claim 19, Nonobe et al. discloses a hybrid fuel cell system (10) comprising:

- a fuel cell (20);
- an electric power storage device (30);
- a load portion (32 and 34) which consumes electric power (C8/L25-37); and
- a control portion (50) which controls an amount of electric power consumed by

the load portion (abstract)

- based on a difference between a supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and an actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46); and

- wherein the control portion (50) changes the amount of electric power consumed by the load portion (32 and 34, C11/L56-C12/L7) to decrease consumption to remove imbalance between charge and discharge (Fig. 6) of the electric power storage device (30) in the system (10) by reducing the difference (IB1, C10/L61-C11/L8; I, C12/L23-46).

Nonobe et al. does not explicitly disclose:

- wherein the control portion changes the amount of electric power consumed by the load portion to increase consumption to remove imbalance between charge and discharge of the electric power storage device

Hauer discloses a hybrid fuel cell system (Fig. 1) wherein the control portion (4) changes the amount of electric power consumed by the load portion (Fig. 1) to increase or decrease consumption to remove imbalance between charge and discharge of the electric power storage device (3, Fig. 1; C2/L34-C3/L2) to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device (C2/L34-C3/L2). Nonobe et al. and Hauer are analogous art because they are directed to hybrid fuel cell

systems. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the hybrid fuel cell system of Nonobe et al. with the control method of Hauer to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device.

Modified Nonobe et al. does not explicitly disclose:

- a filter which removes a noise component contained in the difference between the supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device and the actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device and which outputs the difference with the noise component removed to the control portion,

Okhubo et al. discloses a filter (80a) which removes a noise component (see integrating, [0014]) to measure the charging/discharging current accurately and further the battery capacity highly precisely [0014]. Nonobe et al. and Okhubo et al. are analogous art because they are directed to controlling the charging and discharging of rechargeable batteries. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make hybrid fuel cell system of modified Nonobe et al. with the filter of Okhubo et al. to accurately measure the charging/discharging current and the battery capacity.

Regarding claim 20, modified Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the control portion (50) obtains the supply electric power set value indicating the amount of electric power which needs to be supplied from the

electric power storage device (IB1, C10/L61-C11/L8) based on

- at least a supply electric power set value indicating an amount of electric power which needs to be supplied from the fuel cell (IF1, C10/L61-C11/L8) and
- a consumption electric power set value indicating an amount of electric power which needs to be consumed by the load portion (IT1, C10/L61-C11/L8).

Regarding claim 21, modified Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the load portion (32 and 34) includes a system accessory (34), and
- the control portion (50) obtains the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8),
  - using the consumption electric power set value (IT1, C10/L61-C11/L8) including an amount of electric power consumed by the system accessory (34, C10/L61-C11/L8)

Regarding claim 22, modified Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the load portion (32 and 34) includes a drive motor (32), and
- the control portion (50) controls an amount of electric power consumed by the drive motor (32, C11/L56-C12/L7)
  - based on the difference between the supply electric power set value

indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and the actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46).

Regarding claim 27, Nonobe et al. discloses a hybrid fuel cell system (10) comprising:

- a fuel cell (20);
- an electric power storage device (30);
- a load portion (32 and 34) which consumes electric power (C8/L25-37),
- the load portion (32 and 34) including a system accessory device (34) other than a main drive motor (32);
- a control portion (50) which controls an amount of electric power consumed by the load portion (abstract)
    - based on a difference between a supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and an actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46),
- a computing portion (54) for changing the amount of electric power consumed by the load portion (IT1, C10/L61-C11/L8) to remove imbalance between charge and discharge of the electric power storage device (30) in the system (10) by reducing the difference (IB1, C10/L61-C11/L8; I, C12/L23-46).

Nonobe et al. does not explicitly disclose:

- a computing means for changing the amount of electric power consumed by the system accessory of the load portion

Hauer discloses a hybrid fuel cell system (Fig. 1) wherein a computing means (4) changes the amount of electric power consumed by the system accessory of the load portion (2, Fig. 1; C2/L34-C3/L2) to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device (C2/L34-C3/L2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the hybrid fuel cell system of Nonobe et al. with the control method of Hauer to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device.

Modified Nonobe et al. does not explicitly disclose:

- a filter which removes a noise component contained in the difference between the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device and the actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device, and which outputs the difference with the noise component removed to the control portion;

Okhubo et al. discloses a filter (80a) which removes a noise component (see integrating, [0014]) to measure the charging/discharging current accurately and further the battery capacity highly precisely [0014]. Nonobe et al. and Okhubo et al. are analogous art because they are directed to controlling the charging and discharging of rechargeable batteries. Therefore, it

would have been obvious to one of ordinary skill in the art at the time of the invention to make hybrid fuel cell system of modified Nonobe et al. with the filter of Okhubo et al. to accurately measure the charging/discharging current and the battery capacity.

Regarding claim 28, modified Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the control portion (50) obtains the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8)
    - based on at least a supply electric power set value indicating an amount of electric power which needs to be supplied from the fuel cell (IF1, C10/L61-C11/L8) and
    - a consumption electric power set value indicating an amount of electric power which needs to be consumed by the load portion (IT1, C10/L61-C11/L8).

Regarding claim 29, modified Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the load portion (32 and 34) includes a system accessory (34), and
- the control portion (50) obtains the supply electric power set value indicating the amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8),
    - using the consumption electric power set value (IT1, C10/L61-C11/L8) including an amount of electric power consumed by the system accessory

(34, C10/L61-C11/L8).

Regarding claim 30, modified Nonobe et al. discloses all claim limitations set forth above and further discloses a hybrid fuel cell system:

- wherein the load portion (32 and 34) includes a drive motor (32), and
- the control portion (50) controls an amount of electric power consumed by the drive motor (32, C11/L56-C12/L7)
    - based on the difference between the supply electric power set value indicating an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and the actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46).

Regarding claim 32, modified Nonobe et al. discloses a hybrid fuel cell system (10) comprising:

- a fuel cell (20);
- an electric power storage device (30);
- a load portion (32 and 34) which consumes electric power (C8/L25-37),
- the load portion (32 and 34)including a system accessory device (34) other than a main drive motor (32);
- a control portion (50) which controls an amount of electric power consumed by the load portion (abstract)
    - based on a difference between a supply electric power set value indicating

an amount of electric power which needs to be supplied from the electric power storage device (IB1, C10/L61-C11/L8) and an actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device (I, C12/L23-46),

- a computing means (54) for changing the amount of electric power consumed by of the load portion (IT1, C10/L61-C11/L8) to remove imbalance between charge and discharge of the electric power storage device (30) in the system (10) by reducing the difference (IB1, C10/L61-C11/L8; I, C12/L23-46).

Nonobe et al. does not explicitly disclose:

- a computing means for changing the amount of electric power consumed by the system accessory of the load portion

Hauer discloses a hybrid fuel cell system (Fig. 1) wherein a computing means (4) changes the amount of electric power consumed by the system accessory of the load portion (2, Fig. 1; C2/L34-C3/L2) to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device (C2/L34-C3/L2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the hybrid fuel cell system of Nonobe et al. with the control method of Hauer to protect the electric power storage device from overcharging and over-discharging to prevent degradation of the electric power storage device.

Modified Nonobe et al. does not explicitly disclose:

- a filter which removes a noise component contained in the difference between the supply electric power set value indicating the amount of electric power which

needs to be supplied from the electric power storage device and the actual supply electric power value indicating an amount of electric power which is actually supplied from the electric power storage device, and which outputs the difference with the noise component removed to the control portion; and

Okhubo et al. discloses a filter (80a) which removes a noise component (see integrating, [0014]) to measure the charging/discharging current accurately and further the battery capacity highly precisely [0014]. Nonobe et al. and Okhubo et al. are analogous art because they are directed to controlling the charging and discharging of rechargeable batteries. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make hybrid fuel cell system of modified Nonobe et al. with the filter of Okhubo et al. to accurately measure the charging/discharging current and the battery capacity.

Regarding limitations recited in claims 19-22, 27-30 and 32 with respect to the control portion, these limitations are considered functional limitations and are not given patentable weight. In the previous office actions, the examiner cited prior art references to show the functional limitations were disclosed in the prior art of record; however, these functional limitations are not given patentable weight. The control portion (50) of Nonobe et al. is connected to the fuel cell (20), the electrical power storage device (30) and the load portion (32 and 34) of the hybrid fuel system (10). Therefore, the control portion (50) of Nonobe et al. is capable of increasing and decreasing the consumption to remove an imbalance between charge and discharge by reducing the difference between the supply electric power set value and the actual supply electric power value. See MPEP § 2176.05.

Regarding limitations recited in claims 19-22, 27-30 and 32, which are directed to a manner of operating disclosed control portion, it is noted that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, it has been held that process limitations do not have patentable weight in an apparatus claim. See Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

Response to Arguments

4. Applicant's arguments filed March 10, 2010 have been fully considered but they are not persuasive.

Regarding applicant's argument that Nonobe et al. fails to discuss any possibility of "increase" and does not address or resolve an imbalance due to an error resulting in an overcharge condition (page 11, para. 4), the claim limitation "to increase or decrease consumption" is not given patentable weight. In the previous office actions, the examiner cited prior art references to show the functional limitations were disclosed in the prior art of record; however, these functional limitations are not given patentable weight. The control portion (50) of Nonobe et al. is connected to the fuel cell (20), the electrical power storage device (30) and the load portion (32 and 34) of the hybrid fuel system (10). Therefore, the control portion (50) of Nonobe et al. is capable of increasing and decreasing the consumption to remove an imbalance

between charge and discharge by reducing the difference between the supply electric power set value and the actual supply electric power value. See MPEP § 2176.05.

Regarding applicant's argument that the consumption of a system accessory of Nonobe et al. is not controlled to remove imbalance (page 12, para. 4), the claim limitation "for changing the amount of electric power consumed by the system accessory device" is not given patentable weight. In the previous office actions, the examiner cited prior art references to show the functional limitations were disclosed in the prior art of record; however, these functional limitations are not given patentable weight. The computing portion (54) of Nonobe et al. is connected to the fuel cell (20), the electrical power storage device (30) and the load portion (32 and 34) of the hybrid fuel system (10). Therefore, the computing portion (54) of Nonobe et al. is capable of changing the amount of electric power consumed by the system accessory device. See MPEP § 2176.05.

Regarding limitations recited in claims 15-30 and 32 with respect to the control portion, these limitations are considered functional limitations and are not given patentable weight. In the previous office actions, the examiner cited prior art references to show the functional limitations were disclosed in the prior art of record; however, these functional limitations are not given patentable weight. The control portion (50) of Nonobe et al. is connected to the fuel cell (20), the electrical power storage device (30) and the load portion (32 and 34) of the hybrid fuel system (10). Therefore, the control portion (50) of Nonobe et al. is capable of increasing and decreasing the consumption to remove an imbalance between charge and discharge by reducing the difference between the supply electric power set value and the actual supply electric power value. See MPEP § 2176.05.

Regarding limitations recited in claims 15-30 and 32, which are directed to a manner of operating disclosed control portion, it is noted that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, it has been held that process limitations do not have patentable weight in an apparatus claim. See Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Cullen whose telephone number is 571-270-1251. The examiner can normally be reached on Monday thru Thursday 6:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on 571-272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. P. C./
Examiner, Art Unit 1795

/Robert Hodge/
Primary Examiner, Art Unit 1795